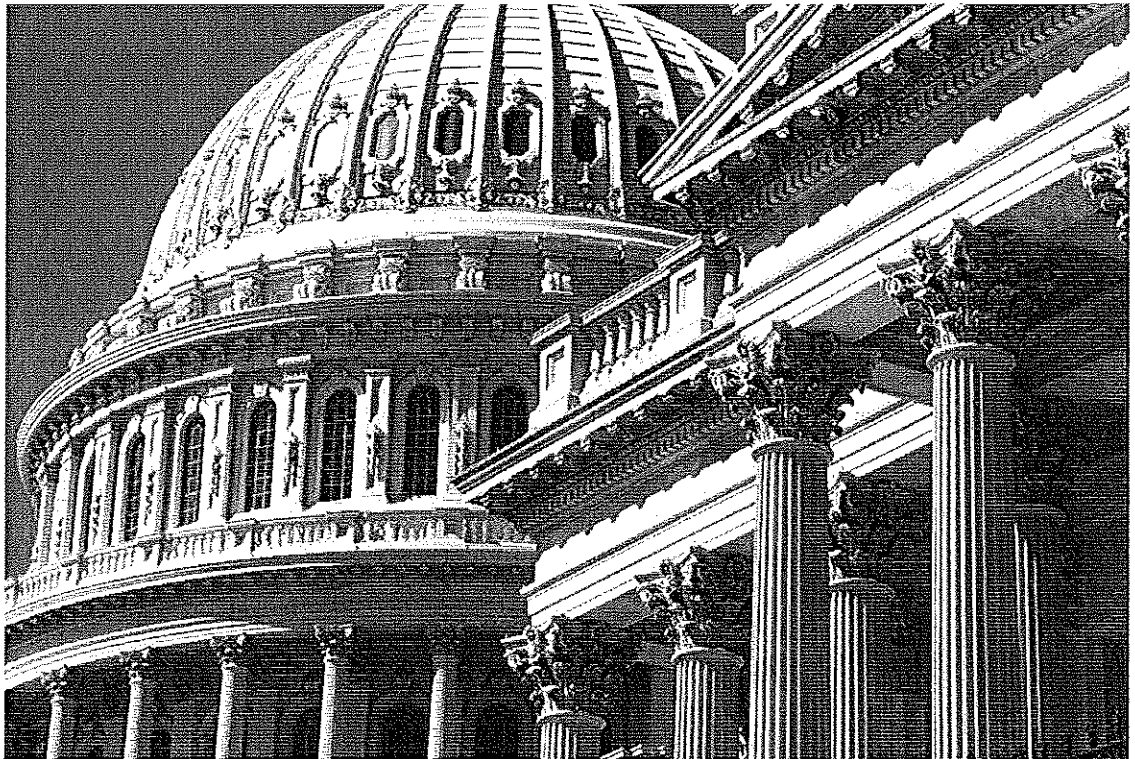


A Comprehensive Review of FAA's NextGen Program: Costs, Benefits, Progress, and Management



Statement of Tom Hendricks
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Air Transport Association of America, Inc. (ATA)
before the
Subcommittee on Aviation
of the
House Transportation and Infrastructure Committee

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AIR TRANSPORT ASSOCIATION

ATA members believe that Congress and the Administration should be guided by a National Airline Policy that will treat America's airlines like the global businesses they are and enable them to operate as such. An indispensable element of such a policy is the modernization of the U.S. air traffic management system, the Next Generation Air Transportation System (NextGen). We therefore appreciate the opportunity to express our views about the progress of this critical national infrastructure program.

Carriers understand the importance of NextGen and are passionate about it. We believe that tangible, near-term results that improve schedule reliability and customer satisfaction, reduce delays, save fuel and reduce emissions can be achieved. Today's NextGen technologies and current equipage can deliver greater efficiencies. In order to achieve these near-term benefits, the FAA should focus on ensuring that the needed policies, procedures and training are in effect to enable realization of the benefits.

Our priorities for that modernization are to:

- accelerate the development and approval process of performance-based navigation (PBN) procedures;
- streamline the National Environmental Policy Act (NEPA) review process to expedite the development and implementation of PBN and other environmentally beneficial NextGen procedures; and
- develop metrics to gauge the actual performance of NextGen.

Each of these objectives is achievable, will enhance airspace utilization and will benefit all who depend on air transportation.

I. OVERVIEW: WHY NEXTGEN MATTERS IMPACT ON THE ECONOMY AND PASSENGERS

NextGen is designed to transform the current air traffic management system that which relies on ground-based navigation and positioning signals from ground-based facilities into a modern system using satellite-based Global Positioning System (GPS) signals for navigation and surveillance, which will provide dramatic efficiency and environmental improvements. The successful implementation of NextGen is critical to the viability and global competitiveness of civil aviation in the United States. Airlines, their employees, the communities that they serve and the U.S. economy all have an important stake in that success.

The current National Airspace System (NAS), despite being the most complex aviation system in the world, is extraordinarily safe. That remarkable safety record reflects the determined efforts of the Federal Aviation Administration (FAA) and its employees, as well as aviation stakeholders, including airlines and their employees. We are grateful for the support and oversight provided by this subcommittee, which also has played a key role in helping shape this success.

As the subcommittee knows all too well, however, the system has been showing its age for some time. That reflects two basic realities: increases in demand over the years and the technological constraints of current radar, navigation, and communications systems. Although these systems have been repeatedly upgraded, they have inherent limitations. For example, at busy airports, congested air traffic control communications is a recurrent problem. That is a limitation that will not go away: Only one person can speak at a time on a radio. NextGen's planned use of digital data communications will alleviate that problem.

Reliance on these legacy systems is costly because they cannot meet current demands in important areas of the NAS, most notably in the New York area. An FAA-commissioned study published last November

estimated that the total cost of U.S. air transportation delays in 2007 was \$31.2 billion.¹ Passengers, according to the study, suffered estimated losses of \$16.7 billion because of schedule buffers, delayed flights, flight cancellations and missed connections. Costs to airlines were estimated at \$8.3 billion, attributable to increased fuel, crew and maintenance expenses. The study concluded that air transportation delays decreased the U.S. gross domestic product by \$4 billion.

These costs paint a picture of a system that cannot handle projected demand. Without significant modernization of the system, we will experience the inexorable spread of airspace congestion, which will constrict air travel and multiply those costs. Not only will users suffer from that ever worsening burden, so will the national economy.

The implications of this situation are profound because of aviation's importance to the economy. In August 2011, the FAA Air Traffic Organization (ATO) published "The Economic Impact of Civil Aviation on the U.S. Economy," finding that commercial aviation was ultimately responsible for 5.2 percent of U.S. gross domestic product, helping generate \$1.3 trillion in annual economic activity, \$394 billion in annual personal earnings and 10.2 million jobs.²

Concern about the future of airspace management, therefore, is not a parochial consideration. This is not "inside baseball." Aviation is one of the principal drivers of the U.S. economy. Future constraints to aviation will thwart economic activity and our international competitiveness. It also will disadvantage airline employees.

While the importance of NextGen is clear, its implementation has been complicated and significant issues remain unresolved. It is not a turnkey operation. Instead, NextGen is an intricate, long-term undertaking. That has important implications for mapping out implementation policies as we go forward.

II. NEXTGEN CAPABILITIES

NextGen is estimated to cost \$40 billion. NextGen will transform today's ground-based air traffic navigation and surveillance system to a state-of-the-art satellite-based system.

Today's ground-based systems add flight time because they cannot consistently route aircraft in a direct, linear fashion. Because current technology does not pinpoint an aircraft's position in space as precisely as a satellite-based system, a greater amount of time and separation must be factored in spacing flights. In contrast, utilizing satellite-based systems, the FAA and airlines will be able to route flights more precisely, directly and efficiently. This will reduce miles flown, flight times, congestion and delays. Less aircraft time in the air and on the ground means less congestion and lower fuel consumption and greenhouse gas emissions.

Projections of fuel consumption and greenhouse gas (GHG) emissions reductions from full NextGen implementation are impressive. They range from 6 percent to 15 percent.

¹ The National Center of Excellence for Aviation Operations Research ("NEXTOR"), "Total Delay Impact Study: A Comprehensive Assessment of the Costs and Impacts of Flight Delays in the United States – Revised Final Report," November 2010, p. vii.

² Federal Aviation Administration, "The Economic Impact of Civil Aviation on the U.S. Economy," August 2011, p. 20.

A. Elements of NextGen that are currently being deployed or undergoing testing and refinement by commercial airlines

Airlines, recognizing the benefits of exploiting existing and anticipated technologies, have committed resources to using available technologies and evaluating the effectiveness of emerging technologies. Examples of these industry initiatives include:

- **Automatic Dependent Surveillance-Broadcast (ADS-B)** – provides surveillance using GPS signals to fix aircraft location more precisely than today's ground-based radar. ADS-B will provide radarlike coverage in areas where no coverage exists today (e.g., Gulf of Mexico and mountainous areas). Ideally, ADS-B will permit reduced separation between aircraft due to improved accuracy by enabling FAA ATC to utilize shared precision location information between controllers and pilots;
- **Required Area Navigation (RNAV)** – enables aircraft to fly on any path within coverage of ground- or space-based navigation aids, permitting more access and flexibility for point-to-point operations;
- **Required Navigation Performance (RNP) procedures (RNAV with enhanced onboard technology)** – monitors aircraft performance and enables closer en route spacing without intervention by ATC and permits more precise and consistent departures/arrivals;
- **Optimized Profile Descents (OPD)** – allow aircraft to fly continuous descent airport approaches rather than traditional "step downs," which conserves fuel, though efforts should be made to ensure their use does not negatively impact efficiency gains made elsewhere;
- **Tailored Arrivals** – allow aircraft to fly an approach that is optimized for the conditions; guidance is developed by ATC based on all known constraints and uplinked to aircraft before top-of-descent;
- **Ground-Based Augmentation System (GBAS)** – technology used to support precision landings in low visibility, poor weather conditions; will supplement current instrument landing systems (ILS) and provide precision approach guidance where ILS systems cannot be installed. Over time, it likely will replace ILS systems as well; and
- **Precision Runway Monitor-Alternate (PRM-A)** – leverages Airport Surface Detection Equipment (multilateration) to provide Closely Spaced Parallel Approach capabilities at airports, which allows aircraft to land more efficiently, increasing runway capacity.

B. Accelerating NextGen

However, we cannot wait for all of the pieces of NextGen to come together. We must get the most out of existing technology.

This means that the FAA should focus resources on expediting introduction of the most cost-beneficial elements of NextGen that are available, most notably performance-based navigation procedures. These will pay immediate dividends for all stakeholders, including passengers and shippers, by increasing system capacity, reducing fuel burn and decreasing emissions. We strongly support section 213 of the *FAA Reauthorization and Reform Act of 2011* (H.R. 658), which directs the FAA to expedite the deployment of PBN procedures, and focus deployment at the top 35 busiest U.S. airports (*i.e.*, Operational Evolution Partnership (OEP) airports).

We are pleased that sections 213 and 214 of H.R. 658 require the FAA to establish, based on stakeholder input, NextGen performance goals and metrics, which is a crucial step to ensuring its successful and timely implementation. While the March 2011 FAA NextGen Implementation Plan maintains that NextGen could reduce flight delays by as much as 35 percent, the U.S. Government Accountability Office

(GAO) noted in December 2010 that the agency has not yet outlined specific goals or identified how it plans to achieve those outcomes. We also support provisions in section 214 that direct FAA to establish performance metrics for the development of PBN procedures that would show, among other things, how such procedures will reduce flight times and save fuel. FAA currently measures its performance by the number of flight routes it creates annually, which does not necessarily benefit airlines and other stakeholders.

White House Chief Technology Officer Initiative

Air carriers are pleased that the White House Chief Technology Officer (CTO), Aneesh Chopra, has initiated a project to drive benefits in the near term of performance-based procedures such as RNP, RNAV and Optimized Profile Descents (OPDs). Last month in Dallas, several airline CEOs met with Mr. Chopra, DOT Deputy Secretary John Porcari and FAA Deputy Administrator Michael Huerta to discuss how we can act collectively to move NextGen forward.

As a result of that meeting, carriers have identified the high-value procedures they view as priorities for development, and procedures that have been developed but for some reason are not being utilized. In addition, carriers have identified FAA policies that need to be addressed in order to achieve real, near-term benefits from procedures. The CTO is creating a Dashboard to measure progress toward making the needed changes in policies, as well as progress in the actual implementation of efficient procedures. Part of the purpose of this work will be to further identify the impediments to the timely implementation of PBN procedures.

Streamline the Environmental Review Process

One issue that has been identified as a bottleneck is the environmental approval process. By definition, developing a useful flight path requires a change in the airspace around an airport, and any material change is generally subject to some level of *National Environmental Policy Act* (NEPA) review, even in those cases where the new flight path will result in environmental improvements. ATA believes that more RNP/RNAV procedures should be subject to a Categorical Exclusion (CATEX), (i.e., do not have a significant effect on the environment and therefore, neither an environmental assessment nor an environmental impact statement are required). We are pleased that section 213 of H.R. 658 directs the FAA to conduct expedited environmental reviews to accelerate the implementation of PBN procedures, and that certified PBN procedures are presumed to be covered by a CATEX, especially in those instances where environmental improvement can be demonstrated.

NAV Lean

FAA has recognized the need to streamline its processes and we commend the FAA for launching the "NAV Lean" program to expedite the deployment of PBN procedures. Unfortunately, implementation of NAV Lean is scheduled to occur over five years. That is unrealistic; we cannot wait that long. Airline average fuel costs in July were up more than 32 percent year over year. U.S. airline fuel costs for the first seven months of this year were up more than \$7.4 billion over the comparable period in 2010. The Department of Energy's U.S. Energy Information Administration last month forecast that average jet-fuel prices this year will be \$3.05 per gallon for the entire year; this compares with \$2.15 per gallon for calendar year 2010.

U.S. airlines have invested billions of dollars in new equipment, infrastructure and technology to maximize fuel efficiency. We are doing our part but we cannot afford to wait years for the introduction of air-navigation procedures that are based on technology that exists today.

III. NEXTGEN CHALLENGES

While the foregoing technological and procedural advancements are essential for achieving future efficiencies, the FAA, in coordination with the aviation community, should quickly and clearly design the future ATC system by identifying achievable near-term, mid-term and long-term:

- milestones for NextGen implementation;
- appropriate training for controllers to implement needed changes to the controllers' handbook;
- performance metrics for NextGen technologies and procedures; and
- revised separation standards.

Moreover, labor and management at the FAA must fully partner to move forward uniformly with implementation and use of the new systems. Modernizing the airspace infrastructure requires comprehensive structural design, and technology development and integration. It also needs workforce acceptance.

As attractive as NextGen is, a word of caution is in order. NextGen is a very complicated undertaking. This means as GAO has stated, "[w]ithout specific goals and metrics for the performance of NextGen as a whole, together with a timeline and action plan for implementation, it is not clear whether NextGen technologies, systems, and capabilities will achieve desired outcomes and be completed within the planned time frames."³

This concern is evident with respect to the development of ADS-B In, which is intended to enable aircraft to receive, process and display other aircrafts' ADS-B transmissions. Our view is that although many of the ADS-B In applications show much promise, additional development and analysis are necessary before investment or implementation decisions can be justified. We recently expressed this view in the FAA ADS-B In Aviation Rulemaking Committee, which I co-chair with Mr. Steve Brown from the National Business Aviation Association (NBAA). We urge continuation and expansion of ADS-B In research and development. Our conclusion, however, is that for many of the applications examined, the existing levels of progress in the areas of benefits, technologies, systems and policy development exhibit risks that many airlines are unwilling to bear. Thus, at this time, achieving a convincing business case for ADS-B In is very difficult for most NAS users.

We believe that the lesson of the ADS-B In ARC is that technology investment and deployment decisions require thorough, disciplined evaluations, including real-world validations of the proposed initiative.

CONCLUSION

NextGen is a vital component to the future success of the airline industry and its employees, and an important means of reducing flight delays and the industry's carbon footprint. The swift implementation of NextGen must be a national priority. Fortunately, many of the technological and procedural advancements listed above are already available and a sizable portion of today's commercial aircraft is equipped to use them.

³ Government Accountability Office, "NextGen Air Transportation System: FAA's Metrics Can Be Used to Report on Status of Individual Programs, but Not of Overall NextGen Implementation or Outcomes," GAO-10-629, July 27, 2010, p. 2.

FAA leadership is the difference between success and failure in realizing the benefits of NextGen for all stakeholders. Accelerating the deployment of NextGen technologies; designing new routes; and implementing new airspace and procedures will produce material improvements in the operational performance and fuel efficiency of aircraft using those procedures.

As noted previously, H.R. 658 includes several important provisions that will help accelerate the most cost-beneficial elements of NextGen. We are grateful that both the House and Senate multiyear FAA reauthorization legislation (S. 223) acknowledge the importance of NextGen, including the deployment of PBN procedures, and urge House and Senate transportation leaders to resolve their differences and approve a final bill as soon as possible.

We also would like to extend our gratitude to Congress for resisting any increases in commercial aviation taxes. Our carriers and passengers are already subject to 17 federal taxes and fees totaling more than \$16 billion annually. To put this into perspective, the federal aviation tax burden on a typical \$300 domestic round-trip ticket has tripled – from \$22 in 1972 to \$61 today. As a result, commercial aviation is now taxed at a higher rate than alcohol, beer, cigarettes and guns – items taxed at high rates to discourage use. The federal aviation tax burden was cited by DOT Secretary Ray LaHood's Future of Aviation Advisory Committee (FAAC) as a threat to the industry's viability and global competitiveness, as well as by President Clinton's airline industry commission, the National Commission to Ensure a Strong Competitive Airline Industry, which concluded 18 years ago that "tax policies often have had a major and adverse effect on the industry. We are of the opinion that changes must be made to relieve the airline industry's unfair tax burden."

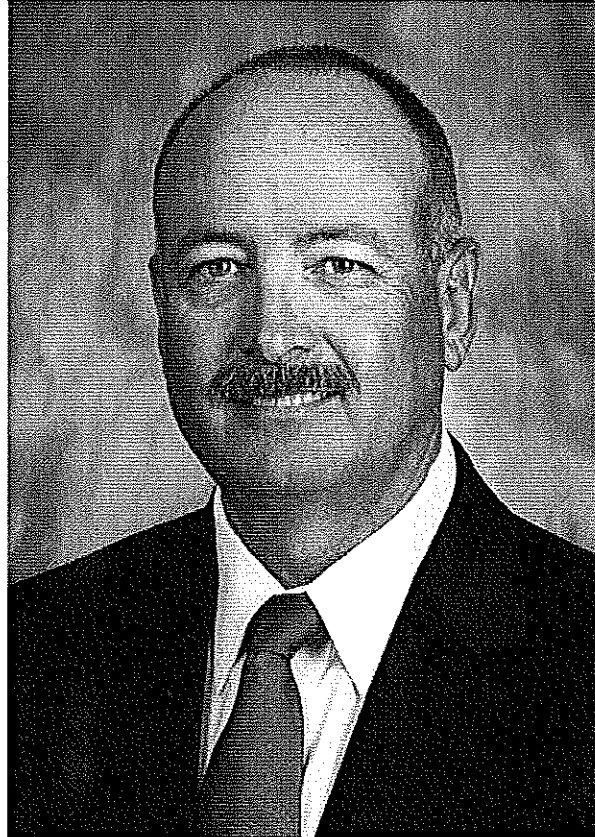
Against this backdrop, we urge Congress to reject the aviation taxes included in the White House debt-reduction proposal, including a new \$100 per flight departure tax on passenger and cargo airlines, and a tripling of the passenger security tax, from \$2.50 per enplanement to \$7.50 per on-way flight by 2017. Over the next decade, these taxes would cost passengers and airlines \$3.5 billion annually – a 21 percent increase in the federal aviation tax burden. The economic firm of Oliver Wyman estimates that just in 2012, these taxes will result in almost 10,000 direct passenger and cargo airline job losses, with total job losses to the entire economy of 181,000. The taxes would be devastating not only to the U.S. airline industry, which has lost \$55 billion and cut 160,000 jobs since 2001, but also to the nation's economic recovery.

In addition to completing a multiyear FAA reauthorization bill and rejecting the White House proposed aviation taxes, we need Congress to help drive:

- commitment to NextGen, which will help build industry confidence in delivering benefits;
- a fair and predictable funding stream;
- continued industry partnership and an aggressive approach to seeking public input through the rulemaking process;
- adoption of consensus-based metrics to measure NextGen implementation progress; and
- consistent, deliberate evolution of the current safe system to NextGen.

Congress must help the U.S. aviation community avoid the compression of these contemplated systemic changes into an artificially brief period of time. The evolution should be planned carefully to enable the continued improvement in what already is the world's safest system. Delaying NextGen until the current infrastructure is truly unsustainable will inject risk unnecessarily into the current system. We simply cannot wait until we are in a crisis management mode to impart these needed changes. A steady metering of constant evolutionary change is what's needed to evolve this very complex system into NextGen.

Thomas L. Hendricks
Senior Vice President, Safety, Security and Operations
Air Transport Association of America



Tom Hendricks was named senior vice president of safety, security and operations for the Air Transport Association (ATA) in February 2011. In this role, he is responsible for technical and operational functions of ATA, developing and shaping ATA member positions on flight operations, safety, engineering, air traffic management and security. In addition, he leads ATA's efforts in cargo, passenger facilitation, airport infrastructure and passenger service standards. He co-chairs both the ADS-B In Aviation Rulemaking Committee and the Working Subcommittee of the NextGen Advisory Committee, and is a member of the RTCA Policy Board. Hendricks joined ATA as vice president, operations and safety in April 2010.

Prior to joining ATA, Tom oversaw day-to-day flight operations at Delta Air Lines as director of line operations. As a captain, Hendricks previously served as chief pilot in Atlanta and represented Delta on several key industry groups. He has extensive line flying experience on the Boeing 767-300ER, DC-9, Boeing 727, Lockheed L-1011 Tri Star and MD-88 aircraft.

A retired Air Force Reserve colonel and career fighter pilot, Hendricks also served on active duty as a United States Navy officer on the USS MIDWAY (CV-41) and as an instructor pilot at the United States Navy Fighter Weapons School. A native of Fairfield, Ohio, Hendricks graduated from The Citadel in Charleston, S.C. with a Bachelor of Arts in Mathematics with Secondary Emphasis in Business Administration.

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
Truth in Testimony Disclosure

Pursuant to clause 2(g)(5) of House Rule XI, in the case of a witness appearing in a nongovernmental capacity, a written statement of proposed testimony shall include: (1) a curriculum vitae; and (2) a disclosure of the amount and source (by agency and program) of each Federal grant (or subgrant thereof) or contract (or subcontract thereof) received during the current fiscal year or either of the two previous fiscal years by the witness or by an entity represented by the witness. Such statements, with appropriate redaction to protect the privacy of the witness, shall be made publicly available in electronic form not later than one day after the witness appears.

(1) Name:

Thomas L. Hendricks

(2) Other than yourself, name of entity you are representing:

Air Transport Association of America

(3) Are you testifying on behalf of an entity other than a Government (federal, state, local) entity?

☒ YES

If yes, please provide the information requested below and attach your curriculum vitae.

☐ NO

(4) Please list the amount and source (by agency and program) of each Federal grant (or subgrant thereof) or contract (or subcontract thereof) received during the current fiscal year or either of the two previous fiscal years by you or by the entity you are representing:

N/A

Signature

Thomas L. Hendricks

Date

10/3/11